

# Steering the IBOR transition

Insight | November 2020



## **Analytical contacts**

**Kshitij Bhatia**

Director – Traded Risk  
CRISIL GR&A  
kshitij.bhatia@crisil.com

**Siva Kumar Veluchamy**

Associate Director – Traded Risk  
CRISIL GR&A  
siva.veluchamy@crisil.com

**Kranthi Kumar Yeldi**

Lead Analyst – Traded Risk  
CRISIL GR&A  
kranthi.yeldi@crisil.com

**Sunay Jain**

Associate Director – Traded Risk  
CRISIL GR&A  
sunay.jain@crisil.com

**Rajesh Narayanan**

Manager – Traded Risk  
CRISIL GR&A  
rajesh.narayanan@crisil.com

**Contents**

Executive summary .....4

Current transition updates .....4

Industry challenges and way forward.....5

Resource constraints.....9

Legacy IBOR contracts and fallback languages..... 10

How CRISIL can help ..... 11

## Executive summary

The interbank offered rate (IBOR), which represents the cost of short-term and unsecured borrowings, is the most widely used benchmark interest reference rate. It is estimated that IBOR is referenced by outstanding contracts of \$350 trillion, with maturities ranging from overnight to over 30 years.

The United Kingdom's Financial Conduct Authority (FCA) said that it will not compel panel banks to submit their unsecured borrowings cost after 2021. Following this decision, the respective IBOR regulators are monitoring the progress of transition to new risk-free rates (RFRs) and the IBOR benchmark's quality very closely. The concern is that regulators may declare that IBOR no longer represents the underlying market well before the December 2021 transition date. This would upend financial institutions' (FIs) transition plans as they are already pressed for time and resources to meet the deadline.

In this paper, we highlight the immediate issues FIs face, and the areas of focus to ensure that they are well-placed for the transition.

A major challenge for FIs is the liquidity of derivative products based on the new alternative reference rates (ARRs), given that IBOR-based products also continue to be traded. Enhanced liquidity for ARR-based derivative products is essential to construct the RFR curve for accurate pricing and hedging, and for product innovation to meet market requirements.

We have also discussed the results of recent regulatory consultations on pre-cessation triggers, fallback methods (for EUR), and possible ARR alternatives. Banks will rely significantly on these results to make changes related to technology and analytics, and strategise remediation of legacy contracts.

## Current transition updates

The International Swaps and Derivatives Association (ISDA) launched a fallback supplement and protocol on October 23, 2020. This is a major step to reduce the systemic impact of IBOR transition, as it enables market participants to incorporate the revised fallback language in their legacy IBOR derivatives trades.

In the UK, the FCA has been granted new powers under the benchmark regulation to alter the methodology of the underlying benchmark for legacy contracts that are considered difficult to amend. Also, legislative proposals are being designed to provide a safety net from litigation for such contracts, or those without fallback provisions.

From October 27, 2020, there has been a change in the quoting convention in the interdealer market that would make Sterling Overnight Index Average (SONIA), rather than London Inter Bank Offer Rate (LIBOR), the default price. Hence, SONIA will become the primary GBP curve and the IBOR curve will need to be calibrated as the spread to SONIA.

According to the UK regulator, a forward-looking term version of SONIA will be available shortly in beta form, while efforts to create an equivalent rate in the US are being held back by a weaker-than-expected volume in Secured Overnight Financing Rate (SOFR) derivatives.

Meanwhile, on August 7, 2020, the Alternative Reference Rates Committee (ARRC) released a SOFR starter kit, which is a set of factsheets to inform the public about the transition away from dollar LIBOR to SOFR, the ARRC's recommended alternative reference rate. The SOFR starter kit includes the history and background on the transition and ARRC's work to select SOFR, key facts about SOFR, and next steps of SOFR.

The recent central clearing counterparty (CCP) discounting switch was an important event in the transition process. It is likely to drive liquidity in RFR products, yielding trading benefits and impacting mark-to-market valuation and risk changes for cleared EUR- or USD-denominated interest rate swap products.

According to our assessment, Tier 1 banks are well-prepared. However, keeping up with rapidly changing market adoptions – such as discounting switch, RFR as a default price for the interdealer market, and building the hybrid curve with expected RFR credit spread to value legacy IBOR derivatives that are expiring post December 2021 – are proving to be a daunting task for even large banks, in terms of pricing and risk infrastructure upgrades and testing. Tier 2 and 3 banks and buy side firms are way behind. Hence, they will need to cover a great distance to catch up with industry leaders.

## Industry challenges and way forward

### Are we ready?

Low RFR liquidity is a major bottleneck for the smooth transition from IBOR. According to regulators, banks still issuing IBOR-linked products expiring beyond 2021 is not considered a good practice.

To ensure seamless transition, FIs should continue to monitor their liquidity for both IBOR- and RFR-linked products over the next few quarters. With the transition slated to happen by end-2021, FIs still have time to develop a more liquid derivatives market based on RFRs.

However, banks are not introducing many new RFR-based products owing to challenges associated with curve building and pricing, product hedging, and increased costs related to new RFR products.

New RFRs such as SOFR have been projected as alternatives to IBOR. However, these have proved to be acutely sensitive to market liquidity, translating into considerably wide spreads with USD IBOR. Therefore, a few sections of the industry are reluctant to embrace RFRs in trading on a large scale.

Nevertheless, data illustrated in the following tables shows a rise in the volume of RFR-linked trades in the derivative and cash markets, particularly in the maturity bucket of less than a year. It is, however, still too early to compare RFRs with the IBOR-referenced market as many IBOR-referenced products are still being transacted by market participants.

However, regulators across regions and currencies are pushing FIs to adopt RFRs to improve liquidity and move the industry away from IBOR. This is necessary to create strong forward-looking term structures based on new RFRs.

**Summary of notional traded and volumes for IBOR and RFR for IRD**

Floating rate	Q2 2020		Q2 2020	
	Traded notional (\$ billion)	Percentage change in notional compared with Q1 2020	Trade count	Percentage change in trade count compared with Q1 2020
USD LIBOR	27,121	-24%	1,81,395	-15%
SOFR	108	-25%	681	-34%
GBP LIBOR	3,703	-11%	33,751	6%
SONIA	2,222	-71%	4,837	-38%
CHF LIBOR	158	1%	3,131	8%
SARON	12	66%	26	53%
JPY LIBOR	1,004	0%	9,059	-15%
TIBOR	4	312%	15	-6%
TONA	58	-48%	160	-36%
EUR LIBOR	1	-26%	16	14%
EURIBOR ESTR	6,242	0%	50,315	-16%

Source: DTCC

SARON: Swiss average rate overnight TONA: Tokyo overnight average rate ESTR Euro short-term rate

**Summary of RFR notional and volumes by maturity**

IBOR	Maturity	Q2 2020	
		Traded notional (\$ billion)	Trade count
SOFR	Below 1 year	146.7	229
	1 -5 years	57.1	516
	Above 5 years	5.9	163
SONIA	Below 1 year	2050.2	1104
	1 -5 years	127.5	1066
	Above 5 years	99.1	3026
SARON	Below 1 year	12	19
	1 -5 years	0.3	3
	Above 5 years	0.2	4
TONA	Below 1 year	52.1	97
	1 -5 years	4.3	24
	Above 5 years	1.4	40
ESTR	Below 1 year	7.3	9
	1 -5 years	1	14
	Above 5 years	0.7	13

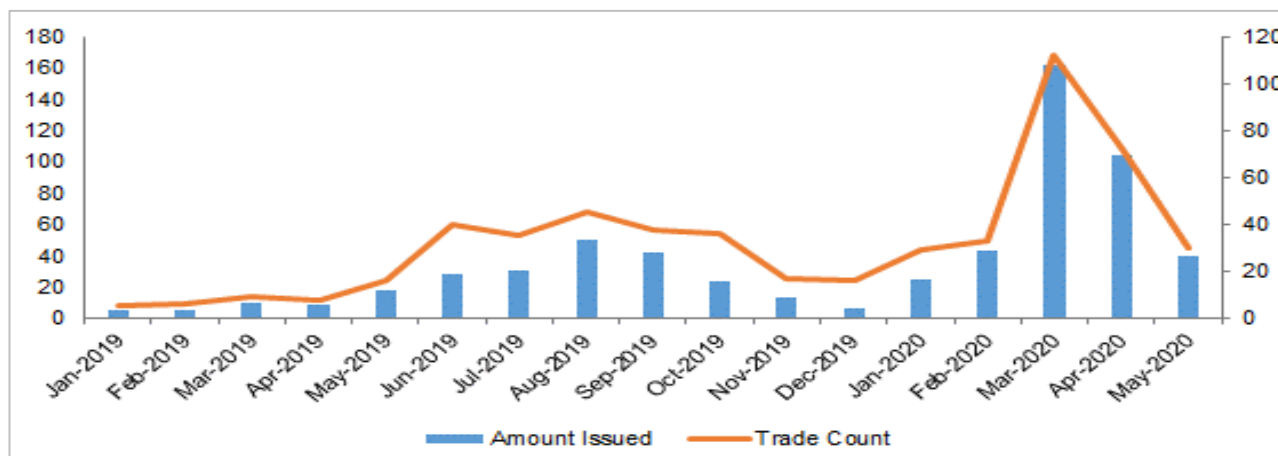
**Traded notional and volumes for IBOR and RFR**

- **Traded notional:** Traded notional of IRD referencing alternative RFRs increased 112.9% to \$10.9 trillion in the first half of 2020 compared with \$5.1 trillion in the second half of 2019. This comprised 7.6% of the total IRD traded notional. Traded notional of IRD referencing LIBOR-denominated in USD, GBP, Swiss franc, yen and EUR, as well as Euro Interbank Offered Rate (EURIBOR) and Tokyo Interbank Offered Rate, increased 22.0% to \$85.7 trillion, and represented 59.6% of the total IRD traded notional compared with 59.1% in the second half of 2019.
- **RFR traded notional and volumes by maturity:** As of second quarter of 2020 (Table 2), the notional amount for trades maturing within a year was higher than those maturing between one to five years, and after five years.

**RFR liquidity in cash market**

- **Bonds referencing SOFR:** SOFR trades increased in the middle of 2019, but declined year end. Volumes picked up considerably in first quarter of 2020, but declined again in April and May 2020. The overall issue size of outstanding SOFR bonds was \$595.5 billion up to May 2020 (see chart below), with ~559 bonds issued.
- **Bonds referencing IBOR:** Market estimates indicate that legacy bonds referencing IBOR with a value of at least \$864 billion globally are due to mature beyond 2021.

Chart 1: SOFR bonds trade count and amount issued (\$ billion)



Source: Bloomberg

## Recommendations

Banks should refrain from trading in IBOR-linked products and instead launch into RFR-linked products. The discounting switch by CCP is expected to increase RFR liquidity. Hence, the main focus of banks should be to construct RFR-linked curves and develop new RFR-linked products.

- 1. RFR curve construction and analytics:** Based on market liquidity, many banks have already constructed the RFR curve as a spread to the existing base curve. However, they still have considerable ground to cover in changing the curve construction design, given the timelines for the discounting switch.

The bank's curve analytics should be flexible enough to swiftly adopt market changes. There are multiple milestones during the course of IBOR transition that the infrastructure of banks should be able to support.

To construct the RFR spread curve for a tenure of up to two years, RFR futures derivative instruments are used initially, and thereafter, RFR-overnight index swap-based instruments. But with the new interdealer quoting convention for SONIA, outright SONIA swaps are now quoted in the market, and we expect the same course to be followed for other currencies. Following the discounting switch, the curve analytics library should modify the curve solver algorithm to accommodate coupling between IBOR quotes with RFR discounting.

The curve analytics should be able to handle:

- Introduction of a new RFR curve
- Discounting switch
- Fall-back rate adoption (RFR + spread for trades expiring beyond 2021)
- Base curve switch

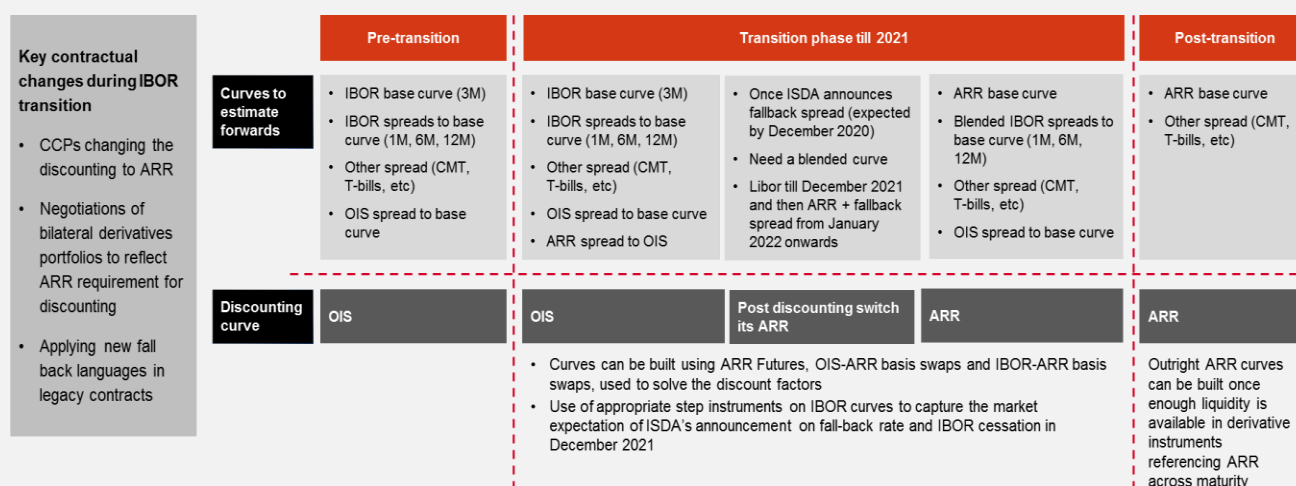
All major banks have, at the very least, begun trading with RFR in exchange-traded and vanilla over-the-counter products cleared via CCPs, and are using some sort of RFR curve to value and manage risk.

Markets are anticipating that ISDA may set the IBOR fallback spread by January 2021, and the fallback activation date in the beginning of January 2022. Once the ISDA fallback is set, LIBOR trades that adhere to the ISDA protocol and expire after December 2021 become effectively trades that are indexed to RFR + fallback spread. Till then, the fallback spread needs to be calibrated as per expectations.

For example, if a trade whose expiry date is beyond 2021, requires a three-month (3M) LIBOR curve, the bank's analytics should be able to build a hybrid curve that is marked to 3M LIBOR up to December 31, 2021, and marked to SONIA + fallback spread from Jan 2022 onwards. Similar curve analytics should be configured for support once the base curve switches to SONIA.

Apart from major curve changes, in case term RFR rates and 'synthetic LIBOR' become a reality, FIs will be required to implement the respective index curve to trade, and risk-manage the instruments referencing these indices.

Once enough liquidity builds in RFR-referenced derivatives, we expect the standalone RFR curve to be the base curve, with other curves being built as a spread to RFR. We expect the discounting switch by CCP to increase RFR liquidity in the market. The discounting switch also happened for the euro short-term rate (ESTR; on July 27, 2020) and SOFR (on October 19, 2020).



The multi-curve framework uses numerical methods such as Newton Raphson, and interpolation techniques such as cubic splines (for long end) and flat continuous forward (for short end).

**2. New product development:** Developing a new product will depend on the time taken for liquidity to build up for RFRs. Once this is achieved, there could be an opportunity to structure new products based on the market scenario and needs. It is also important that regulators and market participants discuss and achieve more clarity on calculations and methodologies for derivative and cash markets. Hence, while IBOR transition is likely to be a drag on resources of FIs, a well-planned and early start will provide them with a competitive edge.

FIs need not view the transition as a regulatory-driven activity; instead, they must foster an appropriate environment that can uncover new avenues for business growth. They should continue to innovate to introduce new RFR-linked products in the market.

Markets have already begun trading or discussing the following new products with underlying RFR:

- Float versus float-basis swaps
- Fixed versus float swaps
- RFR-linked loans
- Bond products – floating rate notes

FIs need to prepare to offer derivatives and cash products to service market demands.



The following table is a comprehensive framework that can be utilised for this. It covers the process from conceptualising a product to successfully booking and managing a trade.

Product structuring	Mapping logic	Model validation	Approval process	Trader support
<ol style="list-style-type: none"> <li>1) Conduct background research and generate idea</li> <li>2) Understand the trade attributes and the available market information for the RFR rate</li> <li>3) Understand the requirement and simplify the product, so that it can be priced using available tools</li> <li>4) Check hedging strategies based on RFR</li> <li>5) Construct a curve for pricing and valuation purposes</li> </ol>	<p>Understand the format of trade presentation in both systems and develop suitable mapping of the token between them so that all the necessary trade attributes are captured appropriately</p>	<p>Revisit and validate the existing rates models, verify cash flows of the product at various important events in their life cycles; Product back-testing, forward stress-testing, and scenario analysis</p>	<p>Once the approval is received from various stakeholders such as market risk ad MO controllers, the trader can execute the trade in the market</p>	<p>Generate periodic P&amp;L and risk reports as well as attribution analysis of breaks in P&amp;L or risk numbers for trader's review and approval</p>

## Resource constraints

Regulators extended the deadline for implementing some of the regulations to help FIs focus on maintaining business continuity and supporting global markets. However, the FCA<sup>1</sup> and the Bank of England recently communicated that they did not plan to further extend the IBOR transition deadline. Accordingly, they have advised FIs to prepare adequately to meet the deadline.

Banks need to work on various areas, including: establishing technology infrastructure, streamlining back-office and middle-office processes, performing model validation, assessing market risk, and undertaking regression testing.

We have found that most tier 1 banks have set up project management office (PMO) teams to manage and track their IBOR transition progress. Resources from different work streams have been allocated to the IBOR transition program to meet the deadline.

However, tier 2 and 3 banks are facing more challenges in assigning resources for PMO teams and undertaking the IBOR transition program, and finding it difficult to fund the program because of the current market situation.

<sup>1</sup> <https://fca.org.uk/news/statements/further-statement-rrwg-impact-coronavirus-timeline-firms-libor-transition-plans>

## Recommendations

- Banks and buy side firms should set up dedicated PMO desks and view IBOR transition as an opportunity to establish efficient risk-management practices rather than consider it as a regulatory program
- They could also find synergies across multiple regulatory programs such as Fundamental Review of Trading Book (or Uncleared Margin Regulation for Phase 5/6 firms) and align resources accordingly. They should focus on funding these projects appropriately and assigning resources to their IBOR program
- Furthermore, a representative should be assigned for each function to take complete ownership and drive the program
- Technology and operations teams should continue to prepare for transition events before the deadline. They could start early and, if necessary, partner with vendors to ease the pressure

## Legacy IBOR contracts and fallback languages

### ISDA protocol on cessation triggers

ISDA has published a supplement covering definitions and protocols to address permanent cessation and pre-cessation event triggers. Meanwhile, fallbacks for legacy contracts should be considered as a 'seat belt', and institutions should explore opportunities to either sell/exit existing IBOR transactions or negotiate with counterparties to change the IBOR reference to RFR for positions that have an expiry beyond December 2021.

As IBOR references millions of financial contracts, including derivatives, bonds and loans, the most significant impact on financial operations is from contract management. The challenges are in renegotiation for legacy contracts across products and review of fallback languages in complex structured note product contracts. There is also the risk of economic value transfer related to the implementation of fallback provisions for contracts maturing beyond 2021.

The latest industry consultations by regulators on legacy products and fallback languages are given below:

The consultation on EURIBOR fallbacks trigger events has been floated by the European Central Bank (ECB) in November 2020 and participants have time till January 15, 2021 to submit their responses. In this consultation paper, the working group has identified a generic set of potential permanent EURIBOR fallback trigger events that market participants could consider including in fallback provisions in their contracts and financial instruments referencing EURIBOR.

The US Federal Reserve Panel overseeing IBOR transition in the country said that market participants could choose rates other than SOFR, given such an alternative rate is robust and complies with the International Organization of Securities Commission benchmark principles. The American Interbank Offered Rate, or AMERIBOR, an unsecured transaction-based interest rate benchmark that represents market-based borrowing costs, has emerged as a possible alternative to SOFR for small- and mid-sized banks. Another could be the US Dollar ICE Bank Yield Index (based on actual unsecured borrowing), as it is forward-looking and credit-sensitive, thus aligning with the needs of cash market participants.

## Recommendations

- **Review legacy contracts:** Given the huge volume of contracts, banks need to look at contract management review and technology solutions. According to the Bank of International Settlements, more than 100 million contracts referencing IBOR exist, representing over \$400 trillion in notional value.
- **Use AI / NLP tools to assist in review:** Banks are likely to find it difficult to review contracts referencing IBOR and change the fallback language to handle temporary or permanent discontinuation scenarios. Most banks do not have contract information in digitised form to extract fallbacks, and manually reviewing and amending contracts is unfeasible. A framework centred on artificial intelligence and natural language processing is, thus, a prudent solution for banks to address contract review challenges.
- **Begin renegotiations early:** As most banks have identified the impact of IBOR transition on legacy contracts, they should begin renegotiations with clients as early as possible, and plan for changes in the language of the contracts.



## How CRISIL can help

CRISIL is at the forefront of assisting financial market participants to prepare for the IBOR transition. We have specialists with a deep understanding of front-to-back dependencies of FIs on IBOR globally.

CRISIL is supporting FIs in preparing, assessing and executing the transition. Some of the key areas we specialise in are:

- Program governance, including a continuous improvement in assessing the impact from IBOR transition
- Quantitative services, which include risk and valuation changes and validation, adjustments within banks' pricing and risk systems to accommodate new curves, and new product development
- System remediation and analytics changes
- Contract management and remediation

## About CRISIL Limited

CRISIL is a leading, agile and innovative global analytics company driven by its mission of making markets function better.

It is India's foremost provider of ratings, data, research, analytics and solutions with a strong track record of growth, culture of innovation, and global footprint.

It has delivered independent opinions, actionable insights, and efficient solutions to over 100,000 customers through businesses that operate from India, the US, the UK, Argentina, Poland, China, Hong Kong and Singapore.

It is majority owned by S&P Global Inc, a leading provider of transparent and independent ratings, benchmarks, analytics and data to the capital and commodity markets worldwide.

## About CRISIL Global Research & Analytics

CRISIL Global Research & Analytics (GR&A) is the world's largest and top-ranked provider of high-end research, risk and analytics services. We are the world's largest provider of equity and fixed-income research support to banks and buy-side firms. We are also the foremost provider of end-to-end risk and analytics services that include quantitative support, front and middle office support, and regulatory and business process change management support to trading, risk management, regulatory and CFO functions at world's leading financial institutions. We also provide extensive support to banks in financial crime and compliance analytics. We are leaders in research support, and risk and analytics support, providing it to more than 75 global banks, 50 buy-side firms covering hedge funds, private equity, and asset management firms. Our research support enables coverage of over 3,300 stocks and 3,400 corporates and financial institutions globally. We support more than 15 bank holding companies in their regulatory requirements and submissions. We operate from 7 research centers in Argentina, China, India, and Poland, and across several time zones and languages.

## CRISIL Privacy

CRISIL respects your privacy. We may use your contact information, such as your name, address, and email id to fulfil your request and service your account and to provide you with additional information from CRISIL. For further information on CRISIL's privacy policy please visit [www.crisil.com](http://www.crisil.com).